

REMARKS

This is in full and timely response to the above-identified Office Action. The above listing of the claims supersedes any previous listing. Favorable reexamination and reconsideration are respectfully requested in view of the preceding amendments and the following remarks.

Claim amendments/Status

In this response, the claims have been amended in a manner which clarifies the subject matter for which patent protection is sought. These amendments find support in the originally filed drawings and written description and do not introduce any new matter. New claims 6-8 have been added in this response. These claims are patentable over the cited art in that they recite structure which is neither found in nor suggested by the said art. Support for the subject matter of these claims is found in the drawings and the originally filed written description.

Rejections under 35 USC § 103

- 1) The rejection of claims 1-3 and 5 under 35 USC § 103(a) as being unpatentable over Durand et al. in view of Dueck et al., to the degree that it is still pertinent to the claims as amended, is respectfully traversed.

There are several differences between the claimed structure and the arrangement disclosed in the primary reference to Durand et al. First, the cyclonic flow used in the claimed invention flows about an essentially horizontal axis which, as demonstrated in Fig. 1 of this application, is induced to rotate about the horizontal axis so as to repeatedly encounter the layer of slag which is formed/collected. This ensures that flyash becomes fused and collected in the slag.

To the contrary, the plasma torches 9 which are used in Durand et al. are arranged in a manner which at first glance might be expected to produce a circular flow about an essentially vertical axis. However, there is no actual disclosure or suggestion of a cyclonic (gaseous) flow being produced and all that is disclosed with respect to gas flow is that as the hot gases rise, and the waste falls "counterflow" therethrough.

Indeed, the orientation of the plasma torches of Durand et al. is such that they are pointed at the bed of slag which is collected at the bottom of the Durand et al. device so as to focus most of the reaction in or on the molten slag *per se*. This may be assumed to possibly produce rotational flow in the molten slag, but there is nothing to suggest that any rotational flow

is imparted to the gas rising therefrom.

The position taken in this rejection that Durand et al. discloses a “cyclonic plasma pyrolysis/vitrification system” is therefore not seen as being soundly based given the disclosure of this reference.

A further difference resides in that the invention as now claimed, use both a plasma torch and a burner. In at least two embodiments of the invention, one plasma torch and one burner are used to heat and swirl the contents of the main combustion chamber so as to roll tightly and continuously over the bed of collected slag.

With the instant application, according to another embodiment (see new claim 6), a second burner (as different from a plasma torch) is used to heat and circulate gas from the main combustion chamber in an auxiliary chamber.

The disclosure which can be gleaned from the secondary reference to Dueck et al. is directed solely to the provision of the auxiliary reactor and contains nothing that would lead to the subject matter of claim 1 as amended. Indeed, there appears to be no disclosure of using a burner to induce heating and swirling in the auxiliary chambers/reactors.

- 2) The rejection of claim 4 under 35 USC § 103(a) as being unpatentable over Durand et al. in view of Dueck et al. and further in view of Groszek et al. is respectfully traversed.

This rejection is such as to suggest that the cyclonic operation which is disclosed in Groszek et al. could be applied to Duran et al. That is to say, Groszek et al. does not involve the formation of molten slag as in Durand et al. and therefore is such that heated fluid can introduced from below a series of vanes in a manner to swirl up into a chamber and cause particulate matter to collected on the sides of the chamber under the influence of centrifugal force. Clearly, a series of vanes are an important part of the Groszek et al. arrangement and as such cannot be omitted in any transfer of teachings which take the disclosure of Groszek et al. as a whole into account.

In that Durand et al. is arranged to top load the waste material and allow it to fall counterflow toward the molten slag through the upwardly rising gas, it is not seen how the Groszek et al. arrangement could find any application in the Durand et al. arrangement. Further, forcing the incoming waste material against the walls of the Durand tower would seem to invite clumping and be counterproductive in assimilating the waste into the slag pool.

The Applicants draws attention to the fact that one of the major issues raised in *In re*

Keller (642 F.2d 413, 208 USPQ 871 (CCPA 1981)) decision is that “the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” In this instance the proposed transfer of teachings would seemingly be such as to omit a vital part of the Groszek et al. arrangement and thus not amount of a fair transfer of teachings.

Reconsideration of this rejection is respectfully requested.

Conclusion

It is respectfully submitted that the claims as they have been amended and newly presented are allowable over the art which has been applied in this Office Action. Favorable reconsideration and allowance of this application are courteously solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
LOWE HAUPTMAN HAM & BERNER, LLP

/Yoon S. Ham/
Yoon S Ham
Registration No. 45,307

Customer Number: 22429
1700 Diagonal Road, Suite 300
Alexandria, Virginia 22314
(703) 684-1111
(703) 518-5499 Facsimile
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